



## Southwestern Office Building Sulfate Reducing Bacteria

**The System:** A 250-ton Trane Chiller with a BAC open cooling tower located in a grated concrete-walled pit adjacent to the parking lot. The cooling tower sits twenty feet below the parking lot and is surrounded by pine trees. The system is operated on city make-up water at 3.5 to 5 cycles of concentration. A local competitive company was treating this system.

**The Problem:** The cooling tower basin was contaminated with dirt, sticks, rocks, pinecones and pine needles. The cooling tower remained full of water during the entire year but sat idle during the colder days. Under the mud in the basin, severe localized corrosion was evident. This corrosion was the result of sulfate-reducing bacteria (SRB). A visual confirmation of SRB was followed up by a positive test using the Hach BART test method.

**The Solution:** The cooling tower basin was cleaned to remove the outside foulants. The SRB nodules were scraped and brushed to expose the surfaces to biocides. A side stream sand filter was installed with a lease-to-purchase option. This filter system included sweeper jets, which increased water flow across the tower basin surfaces. Chemtex UKP-10 was added to the system and circulated for 6 hours. The system was put on a regular biocide program along with HS-4230 for scale and corrosion. After a few weeks, the SRB nodules returned and a second clean-out using UKP-10 was instituted. The biocide program was changed to include AID-05 and AA-4015. The chlorine dioxide was fed on a continuous basis and AA-4015 was added weekly. During the cold weather the cooling water pumps were turned on to circulate the tower water and add biocides on a weekly basis. From the time of initial application it took almost a full year to completely prevent new growth.

**The Benefits:** No new growth of SRB has occurred over the last two cooling seasons. Due to on-site staff reductions, service is now provided on a weekly basis. The chemical treatment program along with the side-stream filter has resulted in a much cleaner tower, requiring less maintenance.